

UNITED STATES PATENT OFFICE.

THOMAS BARROWS, OF DEDHAM, MASSACHUSETTS.

IMPROVEMENT IN PREPARATIONS OF WOOL-OIL.

Specification forming part of Letters Patent No. 13,486, dated August 23, 1855.

To all whom it may concern:

Be it known that I, THOMAS BARROWS, of Dedham, in the county of Norfolk and State of Massachusetts, have made an invention or discovery of a new and useful improvement in the treatment of wool preparatory to its being carded, spun, or woven; and I do hereby declare that the following is a description of the principle and application of my invention.

To facilitate the mechanical operations on wool it is the common practice to use oil preparatory to carding it, by which the fibers are loosened, and the naturally-adhering varnish-like matter not removed in the "scouring" is softened. In the subsequent steps, in forming the rovings and spinning, the oil previously added prevents or much diminishes the excitation of electrical attraction, which in the colder months would very much interfere with the production of good rovings or even thread. The oil as usually added to some extent overcomes these obstacles to the certainty and uniformity of the manufacture of wool by machinery, but its use involves the increased expenses of removing it from the fabricated articles wholly or, as usual, only partially by the use of soap or some other chemical agents, and especially before the goods can be perfectly dyed, as the oil under the management does not fully effect all that is desired. Manufacturers of yarns or cloth from wool, in order to produce the required results, are often led into experimenting on different kinds of oils and mixtures of oils, or mixtures of oils and saponaceous compounds. The general requirement I have found to be the presence of aqueous moisture through all the steps of the mechanical operations. Purely oiled wool has a strong tendency to lose even the naturally-combined water of its fibers, the different kinds of oil showing in this connection different characters in inducing this loss. Hence in order that water might be retained entangled by the oil manufacturers have used oil and ammonia-water in the form of an emulsion. Gelatinous bodies—like common glue—have been used, which, aside from putrefying, often render impossible the cleansing of the fabricated articles in cold fluids. My own experiments, continued through many years, have led me to the use of peculiar mucilaginous substances, combined

or mixed with oil, either naturally or artificially. As an instance, the mucilage of flaxseed and similar seeds contains much entangled oil, and with a small addition of oil will answer as a substitute for oil within certain limits of time; but most of these oils having a drying nature, wool on which the mucilage has been used cannot be safely stored on account of the danger there is of spontaneous combustion. I have resorted to the use of those kinds of mucilage which, retaining water, do not become dry or adhesive when used alone or mixed with oil; and my invention, discovery, or improvement has as its principle the use of such mucilage from plants and seeds as is of a kind that retains moisture, does not readily dry, and yet can be mixed uniformly with oils. In forming the mixture I also keep in view the nature of the oil, and, avoiding the use of siccative oils, prefer the purified oleic acid, or so-called "elaine," which is to a small extent soluble in water, and is an article of great importance in the treatment of wool. Its application thereto I do not claim to have been the first to make.

In applying my invention the first step is the preparation of a clear mucilage by boiling in water the substance affording mucilage, such as carrageen, Irish moss, or other marine plants of allied species yielding mucilage freely. These I prefer for the qualities of the matter extracted, as well as for the abundance and cheapness of the material, it being an almost worthless product on most parts of our sea-coast. One pound (avoirdupois) of Irish moss or similar plants affording mucilage, after having been carefully washed in cold water, so as entirely to remove the sea-salt, may be dissolved in eight or ten gallons (wine measure) of water by steeping for six or twelve hours while the water is tepid, and afterward boiling by a dry steam pipe or coil until solution takes place. Seeds and mosses may be treated in the same way or by boiling over the fire and constant stirring. The clear mucilage may then be used to impregnate the wool, using from one to two and one-half gallons for every one hundred pounds of wool, and afterward adding from one to one and one-half gallon of oil to the moistened wool; or in most cases it is preferable to follow a